



NMR&D News

Naval Medical Research
and Development

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Navy Medicine Invests in Major NMR&D Facility Upgrades

By Jerry Morris
NMR&D Director of Facilities

Throughout the enterprise, Naval Medical Research and Development (NMR&D) is reviewing and enhancing facilities that are not affected by base realignment and closure (BRAC). Some of the more extensive ongoing projects are described below.

Naval Medical Research Center Detachment (NMRC), Lima, Peru

Project upgrades of buildings 1 and 2 were awarded in 2008 with the contractor mobilizing in early 2009. The work entails extensive improvements to the life safety system as well as the heating, ventilation and air conditioning of the buildings housing the vivarium, labs and administrative areas. A major portion of the work is to install a fire suppression sprinkler system throughout the buildings. A cistern was built to ensure sufficient water capacity. The project is on



Construction of Fire Suppression System
Water Storage and HVAC Upgrades in
Building 2, NMRC-Lima, Peru



Building 330, NHRC

schedule with anticipated completion in December of 2009.

Naval Health Research Center (NHRC), San Diego, California

NHRC has acquired an additional adjacent building within their complex at Point Loma, California. Building 330 is under renovation and will be outfitted with laboratory equipment to support the microbiology department. The laboratory facilities are scheduled to be completed this fall, with an anticipated operational occupancy early 2010.

Naval Submarine Medical Research Laboratory (NSMRL), Groton, Connecticut

Approximately 18 months ago, a facility utilization study and deficiency tabulation was conducted to evaluate the current and future needs of NSMRL. The study culminated in a report recommending consolidation of personnel and programs from the existing three buildings into two. This recommendation would entail major renovations to buildings 141 and 156



Renovations to Buildings 141 and 156
with Connecting Bridge, NSMRL,
Groton, Connecticut

with a connector bridge between them. The bridge will enhance American with Disabilities Act compliance between the buildings and house a more efficient reference library. Contract award is anticipated by the end of 2009.

Naval Medical Research Unit 3 (NAMRU-3), Cairo, Egypt

A team of architects and engineers conducted a facility utilization study and deficiency tabulation of the laboratory complex of NAMRU-3 and identified a number of recommended actions. One of the highlights of the report is the cornerstone of the research mission of the command, building 67. This building was constructed in 1983 and is in a state of much-needed capital improvement. It houses the majority of biosafety level laboratories at the command

Additional recommendations included upgrades to the fire protection infrastructure as well as other facilities within the compound. Design of the building 67 upgrade will commence in early 2010 with the intention of a multi-year renovation plan.



Building 67, NAMRU-3,
Cairo, Egypt

Commanding Officer's Message

Men and Women of Naval Medical Research and Development (NMR&D):

Most of you probably realize that we have several BRAC-related construction projects in the works. What you may not have known until reading this issue is that we have major facility renovation and improvement projects underway in almost every one of our commands and detachments. I am sure you understand that projects of this magnitude do not just "happen," and I would like to publicly recognize one of our fantastic and dedicated staff, Mr. Jerry Morris at NMRC who, with great support from Mr. Mike Plante at NMSC, leads these efforts so that our aging facilities can better reflect the great people working in them. Thanks, Jerry!

Speaking of our great people, a special "BZ" goes out to all those who have served at NHRC, which has just celebrated its 50th anniversary...congratulations to the following officers who have been selected for promotion to Commander: LCDR Helen Chun, LCDR Steve Newell and LCDR Forest Sheppard...last but not least, a fond "Fair Winds and Following Seas" to CAPT Dale Ehrlich, who has completed a distinguished 40 year career in Navy Medicine!

In addition to stories from EHEL and NAMRL, this issue of NMR&D News also highlights those of you who represent Navy Medicine, not in NMR&D-maintained facilities, but in very unique billets in our smaller sites around the world - Accra, Geneva, Singapore, Phnom Penh - as well as two of our NMRC staff currently TAD to the USNS Comfort and to GTMO (Cuba).

I hope you enjoy reading NMR&D News. As always, it is my honor and great privilege to serve you - thanks for your dedication and for the tremendous efforts you make every day on behalf of our mission!

v/r
CAPT Chris Daniel



NMR&D's Liaison with the World Health Organization

By CDR Matthew Lim
NMR&D Liaison to WHO

CDR Matthew Lim is Navy Medicine's medical liaison to the World Health Organization (WHO) in Geneva, Switzerland. A specialist in internal medicine and infectious disease, CDR Lim was assigned to the Department of Defense (DoD) HIV/AIDS Prevention Program at the Naval Health Research Center when he was seconded to WHO in 2007. He works as the Civilian Military Liaison Officer, WHO in the Department of Global Alert and Response, fostering stronger links between WHO and DoD in the area of public health preparedness for emerging infectious diseases.

As a fully accredited WHO staff member, CDR Lim coordinates the WHO Clinical Network, bringing together clinicians from diverse backgrounds to identify best practices for the care of patients in outbreak settings and develop pathways, tools and programs to implement and evaluate improvements. Initiatives include an information technology partnership to develop better data collection tools for outbreak man-

agement, "emergency use" research protocols for rapidly investigating novel pathogens, and training programs for low-resource settings in the management of severe infectious illness.

Two high-profile efforts involve modifying Acute Lung Injury treatment guidelines and Surviving Sepsis Campaign materials for use in limited resource settings. The Acute Lung Injury project involves collaboration with the WHO Integrated Management of Adolescent and Adult Illness Program and the Global Influenza Program. Collaborators in this program include the University of California – San Francisco, Beth Israel, the University of Washington (Seattle), the University of Virginia, the Liverpool School of Tropical Medicine, the Leicester Royal Infirmary, the Centers for Disease Control and Prevention, and the National Institutes of Health. Partners in the Surviving Sepsis Campaign include the National Institute of Allergy and Infectious Diseases, the U.S. Army Medical Research Institute of Infectious Disease, the University of Virginia, Cambridge University, the University of the Witwatersrand, Boston University,

Beth Israel Deaconess, and Naval Medical Center San Diego.

As part of the H1N1 pandemic response, CDR Lim moderates clinician information exchanges and is a central member of the technical advisory group developing global strategies to combat the epidemic. He also is involved in capacity building projects in Africa and participates in field outbreak response missions and investigations. As an integral member of the WHO secretariat, CDR Lim can identify areas of WHO's work plan where DoD and other military assets can productively collaborate to the benefit of both sides and increase the strength and effectiveness of DoD's multilateral engagements at regional and global levels.



NAMRU-2 Detachment Singapore

By LCDR Gary Brice
Navy R&D Liaison Officer, Singapore

The Naval Medical Research Unit 2 (NAMRU-2) detachment in Singapore was established in 2007 in response to global emerging infectious disease threats and to realign the activity under NAMRU-2's mission of infectious disease surveillance and control in Southeast Asia. The detachment is located at the Office of Defense Coop-



Plaque exchange between RDML Michael Anderson, PACOM Command Surgeon, and RDML John Wong, Chief of Medical Corps, Singapore Armed Forces commemorating SAF's participation in the global influenza surveillance program

eration (ODC) at the American Embassy and is staffed with one Medical Service Corps microbiologist serving as the Navy Biomedical Research and Development Liaison Officer. The position provides technical and logistical support for NAMRU-2's collaborative activities throughout the region and strengthens the U.S. Government's relationship with Singapore.

Within Singapore, NAMRU-2 collaborates with both Ministry of Health and Ministry of Defense agencies as well as with research groups at universities and local biotech firms. Current activities include sentinel influenza surveillance in Singapore Armed Forces personnel and pediatric populations, malaria drug resistance surveillance, and field trials to evaluate the effectiveness of passive and active vector control and abatement devices. Future activities include preclinical vaccine research studies in primates and expanded influenza surveillance studies in expatriate populations.

In addition, the NAMRU-2 detachment supports ODC Defense Cooperation in Armaments activities, including initiation and development of Information Exchange Agreements and Research, Development and Technology Evaluation Agreements with countries within the Pacific Command's area of responsibility. The detachment also provides biomed technical support to other U.S. agencies with activities in Singapore, including the Office of Naval Research-Global and U.S. Defense Threat Reduction Agency.



Exchange visit with Japanese Maritime Defense Forces and LCDR Gary Brice (NAMRU-2 Singapore) and Mr Randall LeBlanc (NAMRU San Antonio)

Navy Medical Liaison Officer Leads Translators, Ensures Medical Operations Run Smoothly on USNS Comfort

By MCC Teresa J. Frith
Public Affairs Production Manager,
USNS Comfort

LT Kevin Marrs, whose parent command is the Navy Medical Research Center (NMRC), is serving onboard Military Sealift Command Hospital Ship USNS Comfort. A medical liaison officer from Waynesboro, Virginia, Marrs helps to ensure the Medical Operations Center runs smoothly and any needed translation is completed efficiently during Continuing Promise 2009 (CP09).

"I volunteered to come on this deployment to gain operational seagoing experience and further develop naval leadership skill," said Marrs. "I have enjoyed getting the opportunity to experience other cultures as well as interacting with fleet naval leadership."

Comfort is currently coming to the end of its four-month humanitarian and civic assistance mission to Latin Amer-

ica and the Caribbean region. While on its mission, it brought medical, dental, veterinary, educational, and engineering support to the countries of Haiti, the Dominican Republic, Antigua and Barbuda, Columbia, Panama, El Salvador and Nicaragua.

Marrs' job requires him to provide logistical support for all the medical sites in the execution of the daily ship-to-shore logistics plan. He is responsible for coordinating the combined efforts of 50 U.S. Navy officers and enlisted service members as they collect data used to evaluate the overall success of the CP09 mission.

"This has been a wonderful opportunity to learn how to integrate medical information flow and shore site management," said Marrs. "It has allowed me to acquire diverse skills and operational experience."

According to LCDR Allen Hobbs, CP09 operations officer, the Medical Liaison office is critical to the Com-

fort's mission. "We could not accomplish the mission without the medical operations team both on the shore side and in the hospital," he said. "Without them we wouldn't be able to see patients because they tell us how patients are going to be managed."

Marrs has also been leading a team of over 100 medical translators to ensure that proper care is provided to patients who do not speak English and would otherwise be unable to communicate with the medical personnel.



*LT Marrs aboard USNS Comfort
Photo by SPC Langdon Stephenson*

NAMRU-3, Ghana Detachment

By NAMRU-3 Staff

In 2001, the Naval Medical Research Unit 3 (NAMRU-3) established a medical research detachment in Ghana to advance U.S. Naval malaria research. This location is also well-suited for conducting research on other tropical infectious diseases. The detachment is committed to facilitating collaborative research relationships that join the resources of U.S. institutions with talented local researchers.

The Officer in Charge, LCDR Karl Kronmann, maintains offices at both the American Embassy and the Noguchi Memorial Institute for Medical Research (NMIMR) at the University of Ghana. Activities at the embassy include participating in the ambassador's country team and assisting with the establishment of a U.S. President's Emergency Plan for AIDS Relief program in Ghana. The staff has expanded

to include an administrative assistant at the embassy and seven technical employees at NMIMR. In the fall of 2008, extensive renovations were completed at NMIMR resulting in the ability to perform routine bacteriology, real time PCR, and ELISA.

The detachment is working with the U.S. National Institutes of Health to prepare four sites for malaria vaccine trials. Phase 1 trials will soon begin at NMIMR with an EBA-175 vaccine and the application of Adenovirus 35 Circumsporozoite vaccine in Burkina Faso. The detachment is also conducting malaria drug resistance studies with NMIMR. In collaboration with NMIMR and the Ministry of Health (MOH), the detachment assisted with the creation of a National Influenza Center, where it will conduct influenza-like illness surveillance. This laboratory was instrumental in the regional response to the recent H1N1 pandemic.



This summer the Ghana Detachment intends to work with the MOH and the Ministry of Defense to launch a hospital-based surveillance system. Acute febrile illness, severe acute respiratory illness and diarrhea studies will be conducted at the three largest hospitals in greater Accra. The detachment is also active in training and conducting regional workshops for West African countries as well as supporting a field portion of the Uniformed Services University of the Health Sciences Military Tropical Medicine Course.

Photo by LCDR Karl Kronmann

NAMRU-2 Cambodia Expands Research Efforts

By Dr. Thomas Wierzba
Director, NAMRU-2 Cambodia

In 1998, the U.S. Ambassador to Cambodia, Kenneth Quinn, and the Cambodian Minister of Health, Houg Sun Hout, signed an agreement establishing the Naval Medical Research Unit-2 (NAMRU-2) laboratory in Phnom Penh. Both parties envisioned an active relationship for the study of infectious diseases. To support the agreement, the Minister of Health assigned a 248 square meter, two-story building at the Cambodian National Institute of Health to NAMRU-2. The building houses a diagnostic laboratory, epidemiology staff and administrative office. In 2006,

the Commanding Officer directed that staff intensify and expand research activities in Cambodia. Over the next three years, the laboratory's staff and diagnostic capabilities increased substantially to account for an increasing number of investigations.

The laboratory currently employs 35 technicians in bacteriology, serology, parasitology, molecular biology, and accessioning sections with oversight provided by Medical Service Corps (MSC) staff from NAMRU-2 in Jakarta and an MSC microbiologist stationed in Cambodia. Field sites, including 35 staff in Kampong Cham Province, are supervised by eight Cambodian medical staff. Close cooperation is maintained with Cambodian agencies, including the Communicable Disease Control Department, where NAMRU-2 is an active member of the Technical Working Group on Infectious Diseases; the Cambodian National Institutes of Health; the National Immunization Program; the National Center for Parasitology, Entomology and Malaria Control; the Medical Department of the Ministry of National De-

fense; the Pasteur Institute; and the World Health Organization.

Current investigations include in-vivo studies of drug resistant malaria, an 800-person longitudinal study of avian influenza virus transmission, passive surveillance at nine government health centers for etiology of febrile illnesses, and surveillance for the etiology of meningoencephalitis. In late 2009, NAMRU-2 will census a population of 15,000 rural residents in two communes of Kampong Speu Province and use passive surveillance at government clinics to identify incident dysentery cases. NAMRU-2 expects many years of productive work with an excellent diagnostics laboratory and strong relationships with the Cambodian Ministry of Health and local agencies.



U.S. Ambassador Rodley with molecular biology staff



GEIS visitors to Kampong Cham

NHRC Celebrates 50 Years

By Dr. Karl Van Orden
Scientific Director, NHRC

On July 24, the Naval Health Research Center (NHRC) celebrated its 50th anniversary at the Admiral Kidd Club in San Diego. Navy Psychiatric Research Unit (NPRU) and NHRC staff representing every decade of the lab's existence attended the event.

CAPT John Rasmussen (Ret.) talked about how the lab was conceived and funded with only \$30,000 in research funds that had to be supplemented from various sources. CAPT Paul Nelson (Ret.) spoke about Dr. Walter L. Wilkins, the founding Scientific Director of NPRU, and his profound influence on the lab's success. Dr. Wilkins is honored and remembered by



CAPT John Rasmussen (Ret.)

the annual Wilkins Award for Excellence in Biomedical Research

VADM Harold M. Koenig (Ret.) presented the Wilkins Award to Michael Broderick, Christian Hansen and CAPT Kevin Russell for their publication *Exploration of the Effectiveness of Social Distancing on Respiratory Pathogen Transmission Implicates Environmental Contribution*.

In a letter to NHRC Commanding Officer CAPT Kerry Thompson, San Diego Mayor Jerry Sanders proclaimed July 24, 2009 "Naval Health Research Center Day" to acknowledge NHRC's 50 years of outstanding innovation in medical research. Congresswoman Susan Davis (D-California) sent a letter of congratulations and a United States flag flown over the nation's capital.



VADM Harold M. Koenig (Ret.)

NMRC Provides Support to GTMO Surgical Team

In support of Southern Command operations, CDR Eric Elster, M.D. of NMRC was temporarily assigned to Naval Hospital Guantanamo Bay (GTMO), Cuba for general surgery support in June and July. As the sole general surgery provider in GTMO, CDR Elster provided emergency and elective care for service members, dependents and residents of the base. In addition to his clinical duties, CDR Elster enjoyed the tropical weather and numerous recreational activities available in GTMO, including scuba diving, cycling and running.



CDR Elster performing elective surgery with HM2 Adam Spacher
Photo by HM3(SW) Nicholas Rappeno

NAMRL Scientists Present at AsMA Meeting

By CDR Rita Simmons, OIC, NAMRL

The annual meeting of the Aerospace Medical Association (AsMA) brings together a diverse group of civilian and military personnel from all aerospace medicine disciplines and from the United States and abroad. During the 80th meeting in Los Angeles, California, three NAMRL researchers presented their work.

Dr. Richard Arnold discussed the efficacy of armodafinil as a fatigue countermeasure during military air traffic control (ATC) operations. Results of this work demonstrated that armodafinil significantly improved attention and suggested that it should not only be used with military ATCs, but also continue to be studied in other high-tempo military operations.

LT Marc Taylor presented his re-

search involving Survival, Evasion, Resistance, and Escape (SERE) Training. The presentation underlined the unique physiological and psychological predictors for stress and relationships to performance during SERE training and included a discussion of possible interventions. This work will enhance the military's understanding of the key predictors of stress reactivity during extreme military training and perhaps aid in treatment.

Finally, Renee Lojewski presented an interactive computer simulation on enhanced spatial disorientation (SD) training. The training modules contain current empirical knowledge and use multi-media learning to convey the latest developments in aeromedical research. The updated training met a critical need by providing instructors with the latest SD information.

NAMRL's mission ties directly to AsMA's initiative of promoting and enhancing the health, safety and performance of those involved in the aerospace field. These presentations were excellent examples of the lab's ongoing commitment to exploring and finding practical solutions to military operational problems.

NAMRL hosted a Research Showcase on July 27 that highlighted NAMRL research achievements and capabilities to current and potential research sponsors, collaborators and customers. Briefings and demonstrations covered aeromedical research projects and capabilities in the areas of hypoxia, fatigue, motion sickness, spatial disorientation, acceleration and operational stress. This interactive event enhanced existing collaborative relationships and facilitated the development of new ones.

Naval Medical Research and Development

News from the Laboratories

EHEL To Hold Change of Charge

By CDR Gail Chapman, OIC, EHEL



The Naval Health Research Center Detachment, Environmental Health Effects Laboratory (EHEL), located at Wright Patterson Air Force Base, Ohio, will have new leadership on August 25 when CDR Richard Erickson relieves CDR Gail Chapman as Officer in Charge (OIC). The guest speaker and presiding officer at the Change of Charge ceremony will be CAPT Kerry



Thompson, Commanding Officer, Naval Health Research Center, San Diego.

EHEL is a member of the Tri-Service Toxicology Research facility, which conducts research at the molecular level on pulmonary, neurophysiological, reproductive, behavioral and genotoxic health effects of environmental materials of interest to the Navy and Marine Corps. The research forms the baseline for practical risk assessments and appropriate personnel exposure limits based on toxicity.

Under CDR Chapman's leadership, EHEL scientists and technicians have contributed to the scientific characterization of several materials of interest to DoD. EHEL is working on an Iraqi-Specific Particulate Matter Inhalation study to investigate potential pulmonary effects in operational forces. This multi-agency collaboration will be vital in determining the health effects of dust exposure on our warfighters. In



collaboration with Air Force scientists, EHEL has completed research on exposure to synthetic fuels to set exposure guideline levels. EHEL continues to lead a multiagency and academic venture to evaluate the health effects of tungsten alloy shrapnel and pulmonary injuries and the immunological effects of sodium tungstate. In collaboration with Boston College, EHEL is also developing a portable ultrasensitive real-time multiplex bio-sensor based on a novel nanocavity platform to detect/monitor environmental biological agents/chemicals that pose a significant threat to the health and performance of our warfighters.

Hail and Farewell



Fair winds and following seas to CAPT Alex Dale Ehrlich on his retirement after an illustrious 40-year career in the Navy Dental Corps. In 2003 CAPT Ehrlich was assigned to the Naval Institute for Dental and Biomedical Research (NIDBR). He served as the Commanding Officer of NIDBR from 2006 to 2009 and was also appointed by the Surgeon General as Specialty Leader for Dental Research during the same time period. CAPT Ehrlich is pictured being awarded a Legion of Merit and speaking at his retirement ceremony, which was held on July 10, 2009.

Photos by David Charton

Hail to CDR Linda Byrnes, who replaced LCDR Antolino Colon as the new NMR&D Enterprise Safety Officer. She comes to us from the OPNAV Safety Liaison Office in Arlington, Virginia, where she served as the Occupational Health Liaison since 2005. CDR Byrnes is board certified in Comprehensive Practice of Industrial Hygiene by the American Board of Industrial Hygiene.

Photo by Mike Chute



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